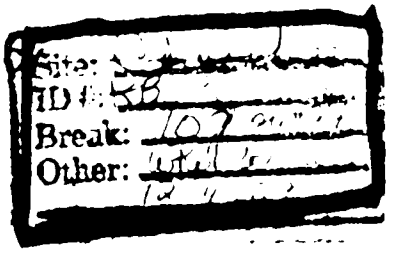
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101



DEC 4 1989

Mr. Ken Paulsen
Amax Mineral Resources Company
1626 Cole Blvd.
Denver, CO 80401-3293

Dear Mr. Paulsen:

This letter and attachment provide comment to the "Cherokee County, Kansas - Baxter Springs/Treece Subsites Draft Work Plan for Remedial Investigation/Feasibility Study (RI/FS) and Endangerment Assessment (EA)" dated November 9, 1989. The Environmental Protection Agency and CH2M Hill have conducted a review of this document. From this review, the Agency recognizes the good faith effort and is optimistic that an agreement can be reached to initiate the conduct of an RI/FS and EA in the very near future. General comment to the work plan is provided below. More specific page-by-page comments are provided in Attachment 1.

The work plan proposes preparation of a preliminary RI/FS, EA based on existing data and provides a description and schedule for additional future activity. The Agency concurs with the approach to gather as much information as possible during the preliminary stage of the RI/FS and recognizes that the direction of future work will be better guided subsequent to such a compilation and assessment of available data. However, the Agency interprets the work plan's proposal for future activity as tentative; qualifiers precede many of the proposed activities. The basic field activities described in the EPA conceptual work plan are considered necessary and must receive recognition and a commitment in the RI/FS work plan. In addition, the Agency cautions against drawing any final conclusions in the preliminary documents described in the work plan.

The sections of the work plan which discuss the Data Quality Objectives and ARAR's are inadequate. Proper consideration of these subjects are critical to all phases of the site specific RI/FS from the planning stage, to guide field activities, through screening of technologies and evaluation of remedial action alternatives. Sections of the EPA conceptual work plan which address DQO's and ARAR's should be referenced and incorporated into the workplan as appropriate.

The specific comments provided to the work plan in Attachment 1 address inadequacies and problem and controversial statements on a page-by-page basis. Many of these comments are followed by additional information to be considered in response to the comment. The EPA conceptual work plan should also be referenced in responding to many comments. These comments, EPA conceptual work plan, and EPA RI/FS and Risk Assessment guidance provide insight into EPA's position regarding the proposed work. Reference to this information in the future may minimize the degree of EPA comment to future documents. The Agency anticipates that more of a commitment to the future actions and closer reference to EPA guidance will promote a more agreeable relationship with EPA in the oversight role. The function of EPA and its agents as overseers should not be an exhaustive nor an expensive process.

These comments are provided at this time to promote continued negotiations toward signature of a Consent Agreement to conduct an RI/FS, EA for the Baxter Springs and Treece subsites and also in anticipation of our meeting on December 8, 1989 in Denver. Should there be any questions regarding these comments prior to the meeting, please advise.

I again solicit the group of participating PRPs to identify a technical contact person. This person will function as the central point of contact during future discussions on the work plan and planned RI/FS, EA activities.

Should you have any questions with regard to this letter contact me at (913) 236-2856.

Sincerely yours,

Glenn Curtis

Glenn Curtis
Remedial Project Manager
Superfund Branch
Waste Management Division

cc: Barry Sams
John Richardson
Corinne Faris
Gus Matson
Mark Logsdon
Gary Uphoff
Neil Geitner
Larry Knoche

bcc: Jane Kloechner

CH2M HILL
Engineers
Planners
Economists
Scientists

Date Sent: _____

Time Sent: _____

Sent By: _____

TELECOPY ORDER FORM
(5-13-86)

Please circle if urgent.

URGENT!

TO: Glenn Curtis / EPA VII
Office

FROM: Neil Geitner
EMPLOYEE NO.: 4122

CH2M HILL CENTRAL (DEN)
303/741-4053 (direct dial)
Omnifax G96

SUBJECT: Baxter Springs/Treece Work Plan Comments

DATE: 4 Dec 1989

PROJECT NUMBER: DEN 68541.PM.

TELECOPY TELEPHONE NUMBER: 913-236-2903

NUMBER OF PAGES SENDING: COVER PAGE PLUS 14 SHEETS

RETURN ORIGINAL: YES X NO _____

RETURN ORIGINAL TO: Neil G.

ADDITIONAL INSTRUCTIONS: _____

Attachment 1 12/4/89

EPA REVIEW COMMENTS
on
DRAFT WORK PLAN
BAXTER SPRINGS/TREECE RI/FS and ENDANGERMENT ASSESSMENT

prepared by PRP Group
dated November 9, 1989

EPA review comments are organized by section in the order of the report.

1.0 INTRODUCTION

1.1 BACKGROUND

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¶2 This paragraph needs to make reference to both CERCLA and SARA not just the NCP.

Objective Points:

1. This statement needs clarification. It could be interpreted to say that no new information is needed. From a preliminary review of the available data, there is insufficient data on the water quality of both the surface and groundwater systems to meet either the general information needs stated in ¶1.

2. As with the previous point, this objective is very vague. It could be interpreted in a very general way or in a very site specific way. EPA guidance specifies the methodology to be used for any risk or endangerment assessment. This guidance must be followed to avoid a potential disagreement at a later time on the results of the endangerment assessment.

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¶1 The statement "should any be necessary" is subjective and needs to be deleted.

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2.0 GROUND AND PHYSICAL SETTING

2.1 SITE HISTORY

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- volume and location of development rock and mill tailings
- metals content of the development rock (visual interpretation is only one method to be used-laboratory analyses is preferred for quantitative results)

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2.2 PHYSICAL SETTING

Suggested wording changes for this section will be provided on December 8th.

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2.2.2 Geology and Geohydrology

¶3-The statement at the end of the paragraph ignores any ground water in the Pennsylvanian. This statement needs to be confirmed by the RI or another source. It is not until the next ¶ that the work plan acknowledges this fact.

Page 13

2.2.4 Soils

¶2-The information given in the EPA work plan came from the Cherokee County soil survey.

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2.2.6 Current Land Use

A CH2M HILL windshield survey of the area showed several industrial plants in the area plus coal mining activities at the periphery. Additional land use inventory work is needed to develop a comprehensive understanding of current local land use. County data may be available to assist with this process

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¶1-This discussion needs to address the thin lateritic soils that developed on the Pennsylvanian rocks. The attenuation of metals through the transport mechanisms at the site has yet to have been established. Similarly, the upward gradient hypothesized in the last sentence has not been proven.

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Table 2-These values are from a one-time, synoptic survey. These conditions could change based on seasonality. and flow conditions. These values were measured at low flow conditions.

¶2-The concern for biota in subsite streams cannot be discounted at this time. Available data indicate elevated levels of metals in fish collected from the Spring River near Baxter Springs as compared to other areas of the state.

¶3-This paragraph implies that no new surface water data will be gathered. Based on the headwaters character of the area, the data applicability needs to be demonstrated. It is currently anticipated

that new flow data will be needed. This paragraph seems to contradict 5.5.3.

Page 20

3.1.5 Soils/Sediments

¶2-As with the surface water section, this paragraph implies that no new data will be gathered. This implication is contradictory to Section 5.5.4, which outlines some data needs. Substantiating data needs to be gathered. The lack of piles being located in streams does not eliminate the potential for runoff. The chat piles will exhibit runoff during precipitation events. It is this runoff or leachate that needs to be evaluated as a source.

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Second Bullet-The statement regarding grain size and lack of bioavailability runs counter to the Galena experience and the general trend of more surface area to volume ratio for finer grained materials. The statements regarding metals concentrations need to be determined using field sampling and analysis.

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¶1-The slimes in the chat piles need to be included in this discussion. The limitation of the risk assessment to these metals relies too heavily on Galena. If the inhalation pathway is evaluated in detail, the list may be different depending on the contents of the fines and chat (e.g. silicosis).

Table 3-The preliminary information presented in the EPA conceptual work plan needs to be added to this data. Also, the source of this data needs to be identified along with sampling and analytical methods.

¶4-The statements in this ¶ are generalizations and extensions based on the Galena work. The purpose of this investigation is to confirm or change these conclusions. The way in which the conclusions are stated makes them sound like givens for Baxter Springs/Treece. For example, the carbonate content of the Baxter Springs/Treece chat piles needs to be determined. The carbonates caused the pH behavior during the Galena pilot tests. If the carbonate levels are

substantially lower for the Baxter Springs/Treece wastes, then the pH behavior may not be the same as at Galena.

Page 22

¶1-The presence of the "low permeable" layer under the chat and mine waste piles needs to be confirmed for Baxter Springs/Treece. The conclusions of the OWRB study need to be reviewed. Seepage is a very site-specific condition. Current information on this topic will be forthcoming from OWRB.

3.1.8 Health and Environment Effects

¶1-This statement is the whole reason that the study is being performed. The PHA needs to be done based on local data to confirm or deny the existence of a health risk.

¶2-The information regarding Empire Lake is not applicable to either subsite as it is upstream.

Page 23

3.2 INITIAL CONCEPTUAL MODEL

Second bullet-EPA concerns regarding this issue were raised in the previous section.

Third bullet-The collection and analysis of data from the two ground water systems will be difficult. The water from the deeper unit will need to come from a bore hole or well in a location suspected to be under the potential influence of the shallow system in and around the mines.

Page 25

Second bullet-How will the connection between the shallow and deep systems be addressed on a subsite basis using water quality information?

Third bullet-Ground water in the mine workings should not be ignored in any analysis. The goal of the analysis should be to achieve the quantification that is mentioned in this section.

Fourth bullet-ASTDR and EPA guidance on risk evaluations needs to be followed (refer to the conceptual work plan). The arguments presented here ignore the "potential threat of a release scenario" used by the EPA.

Page 26

3.3.1 Preliminary Human-Health Risk Assessment

Hazard Identification

¶1-The exceedances discussed need to be checked for use of the new, proposed MCL and MCLG values for all metals and particularly for lead. The statements in this paragraph are speculative and need to be confirmed.

¶2-The lack of data regarding these subsites may cause a delay in the determination of indicator parameters until more data can be gathered.

¶3, First bullet-Dust needs to be added to the ingestion evaluation.

Page 27

Exposure Assessment

¶1-The EPA believes that it is premature at this time to dismiss any exposure route, particularly inhalation. A discussion of this exposure route is necessary in the risk assessment.

Page 28

¶1 and 2-This discussion ignores the presence of fines and slimes in the piles, the high lead levels present in the fines (at Galena), and the transportation of these fines by motor bikes and the wind. Inhalation by the recreational uses will need to be evaluated. The locations of the mine wastes, their slime amounts, and associated metals concentrations need to be mapped as a part of this effort.

¶3-The domestic well issue needs clarification and confirmation.

¶4-The biologic discussion must consider the surface water quality standards of the State.

Page 29

¶2-The completeness and applicability of the supporting data for the statements made on this page needs to be assessed.

Page 30

Uncertainty Analysis

¶1-Add inhalation analysis.

3.3.2 Preliminary Environmental Risk Assessment

Hazard Identification

¶1-More information on the methodology for establishing indicator parameters is needed.

¶2-The terrestrial receptor pathway may require reassessment based on the different type of land use and different surface wastes. A full assessment of all pathways needs to be performed to guide the EA. The U.S. Fish and Wildlife Service disagrees with the generalization in the second sentence.

Page 32

3.4.1 Preliminary Remedial Objectives

The more comprehensive compilation contained in Table 3-2 of the EPA draft work plan should be used . Regarding c, the ARARs contained in Section 3.5 of the EPA conceptual work plan need to be included. The term "real contamination" requires definition or deletion.

Page 32

3.4.2 Preliminary Remedial Action Alternatives

Following Section 2.2.3 of the EPA RI/FS Guidance Manual would better support the needs of this section and would give the required complete approach.

Page 33

d. Collection needs to include consideration of sediments, and mine wastes. This whole section is very incomplete. Following the steps outlined in the guidance manual would allow for a more complete section.

4.0 WORK PLAN RATIONALE

Page 34

4.1 TECHNICAL APPROACH

¶2-The initial assessment step is a valuable one. However, the data base appears currently to be inadequate to assess the many important issues at the two subsites.

¶3-The "looped" data needs assessment process as described in the draft work plan must be subject to further discussion. This process would appear to require a schedule and may need to be part of the consent agreement. At a minimum, the work plan must provide the guidelines or base
s for EPA concurrence at critical decision points.

Bullet 1.-In addition to assessing uncertainties in the available data, it is suggested that the data gaps be evaluated.

Page 35

Bullet b.-The data collection constraints need to be defined and assessed. This section implies unstated constraints. Any decision points would seem to belong in the consent order with some very clear boundaries and schedules.

¶1-The wording of the paragraph implies decisive action. The parties contributing to the action need to be clearly identified and the limits of their control over the decisions outlined.

4.2 DATA QUALITY OBJECTIVES

The DQOs can be preliminarily set now. The DQO process is driven by the desired results and the ARARs. For these reasons, setting preliminary DQOs at this time is appropriate. The discussion contained in Section 4.1 of the EPA conceptual work plan should be incorporated.

Page 36

¶4-The metals list deletes vanadium. It may be useful to include vanadium since the organic matter in mine waste may contain vanadium. Comments regarding the limitation of radiological parameters are appropriate only after a total scan has been performed.

Much of this page can be eliminated with the setting of preliminary DQOs.

Page 37

Table 4-The analyses specified in Table 4 are correct for surface water where total recoverable metals approximate the ambient water quality criteria. Drinking water standards are based on total metals not dissolved. Total metals tests need to be performed for all waters with potential drinking water uses.

Page 38

4.3 OUTLINE OF THE RI/FS TOPICS

While some deliverables can be completed and revised at later times without affecting the schedule, certain deliverables will require EPA approval. These critical points, where EPA approval is required before subsequent activities are pursued, need to be identified. The basis for these approvals also needs to be specified. For example, the Sampling Analysis Plan (SAP), which includes the Quality Assurance Project Plan (QAPP) and Field Sampling Plan, Draft Risk (Endangerment) Assessment and Draft RI/FS. It also appears for the

"loop" process described in Section 4.1 that some formal concurrence on the data needs assessment will be required by EPA prior to submitting the SAP.

4.3.4 Preparation of Detailed Work Plan

4th Bullet-EPA will discuss Community Relations needs at the December 8, 1989 meeting.

5.0 RI/FS TASKS

Page 40

5.1 PROJECT MANAGEMENT

¶1-Project meetings will be held as agreed to by both parties.

¶3-This discussion prompts an EPA concern that regularly scheduled meetings be a part of the RI/FS process. Communications either through meetings or conference calls may be listed as required reporting requirements in the consent agreement.

Page 41

5.2 QUALITY ASSURANCE

¶2-The work plan needs to specify that EPA lab protocols will be followed including QA/QC. Refer to EPA guidance and specification for preparing QAPP.

Page 43

5.3 INITIAL EVALUATION...

3. Site Reconnaissance-The site reconnaissance is a good idea for the project team. The exact parameters to be measured and features to be viewed should be specified in advance after a comprehensive map and literature review. The seasonality of the runoff needs to be considered in planning the trip. The preparation of a "total" RI or FS document with only existing information is seen as having only limited utility. A full evaluation of the data needs seems appropriate.

Page 45

5.5 FIELD INVESTIGATIONS

The content of this paragraph defines the needs for the interactive process recognized in comments to page 38. Much of the remaining sections in 5.5 could be completed in more detail and assembled into a first draft, detailed work plan.
Page 46

5.5.2 Ground Water/Geology/Mining

Second bullet-It is presumed that the quarterly sampling will continue for a year. The duration of the sampling is not specified. The samples for the groundwater should include at least a RAS total metals scan on the initial samples. Total and dissolved measurements need to be performed on the mine shafts. For the wells total metals will be adequate.

Page 51

5.6.7 Identification...

EPA will review and approve the work plan before execution of any pilot tests.

6.0 SCHEDULE

The front end tasks seem longer than necessary. If the planning steps will speed the gathering of additional data, then the time will be well spent. However, some shortening of the initial evaluation duration seems appropriate.

7.0 PROJECT TEAM

No comments on this section.

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¶1-This statement is the whole reason that the study is being performed. The PHA needs to be done based on local data to confirm or deny the existence of a health risk.

¶2-The information regarding Empire Lake is not applicable to either subsite as it is upstream.

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Second bullet-EPA concerns regarding this issue were raised in the previous section.

Third bullet-The collection and analysis of data from the two ground water systems will be difficult. The water from the deeper unit will need to come from a bore hole or well in a location suspected to be under the potential influence of the shallow system in and around the mines.

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Second bullet-How will the connection between the shallow and deep systems be addressed on a subsite basis using water quality information?

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Hazard Identification

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¶3-The domestic well issue needs clarification and confirmation.

¶4-The biologic discussion must consider the surface water quality standards of the State.

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Uncertainty Analysis

¶1-Add inhalation analysis.

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Hazard Identification

¶1-More information on the methodology for establishing indicator parameters is needed.

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The more comprehensive compilation contained in Table 3-2 of the EPA draft work plan should be used . Regarding c. the ARARs contained in Section 3.5 of the EPA conceptual work plan need to be included. The term "real contamination" requires definition or deletion.

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3.4.2 Preliminary Remedial Action Alternatives

Following Section 2.2.3 of the EPA RI/FS Guidance Manual would better support the needs of this section and would give the required complete approach.

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d. Collection needs to include consideration of sediments, and mine wastes. This whole section is very incomplete. Following the steps outlined in the guidance manual would allow for a more complete section.

4.0 WORK PLAN RATIONALE

Page 34

4.1 TECHNICAL APPROACH

¶2-The initial assessment step is a valuable one. However, the data base appears currently to be inadequate to assess the many important issues at the two subsites.

¶3-The "looped" data needs assessment process as described in the draft work plan must be subject to further discussion. This process would appear to require a schedule and may need to be part of the consent agreement. At a minimum, the work plan must provide the guidelines or base
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Bullet 1.-In addition to assessing uncertainties in the available data, it is suggested that the data gaps be evaluated.

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Bullet b.-The data collection constraints need to be defined and assessed. This section implies unstated constraints. Any decision points would seem to belong in the consent order with some very clear boundaries and schedules.

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The DQOs can be preliminarily set now. The DQO process is driven by the desired results and the ARARs. For these reasons, setting preliminary DQOs at this time is appropriate. The discussion contained in Section 4.1 of the EPA conceptual work plan should be incorporated.

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Much of this page can be eliminated with the setting of preliminary DQOs.

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Table 4-The analyses specified in Table 4 are correct for surface water where total recoverable metals approximate the ambient water quality criteria. Drinking water standards are based on total metals not dissolved. Total metals tests need to be performed for all waters with potential drinking water uses.

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4.3 OUTLINE OF THE RI/ES TOPICS

While some deliverables can be completed and revised at later times without affecting the schedule, certain deliverables will require EPA approval. These critical points, where EPA approval is required before subsequent activities are pursued, need to be identified. The basis for these approvals also needs to be specified. For example, the Sampling Analysis Plan (SAP), which includes the Quality Assurance Project Plan (QAPP) and Field Sampling Plan, Draft Risk (Endangerment) Assessment and Draft RI/FS. It also appears for the

"loop" process described in Section 4.1 that some formal concurrence on the data needs assessment will be required by EPA prior to submitting the SAP.

4.3.4 Preparation of Detailed Work Plan

4th Bullet-EPA will discuss Community Relations needs at the December 8, 1989 meeting.

5.0 RI/FS TASKS

Page 40

5.1 PROJECT MANAGEMENT

¶1-Project meetings will be held as agreed to by both parties.

¶3-This discussion prompts an EPA concern that regularly scheduled meetings be a part of the RI/FS process. Communications either through meetings or conference calls may be listed as required reporting requirements in the consent agreement.

Page 41

5.2 QUALITY ASSURANCE

¶2-The work plan needs to specify that EPA lab protocols will be followed including QA/QC. Refer to EPA guidance and specification for preparing QAPP.

Page 43

5.3 INITIAL EVALUATION...

3. Site Reconnaissance-The site reconnaissance is a good idea for the project team. The exact parameters to be measured and features to be viewed should be specified in advance after a comprehensive map and literature review. The seasonality of the runoff needs to be considered in planning the trip. The preparation of a "total" RI or FS document with only existing information is seen as having only limited utility. A full evaluation of the data needs seems appropriate.

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5.5 FIELD INVESTIGATIONS

The content of this paragraph defines the needs for the interactive process recognized in comments to page 38. Much of the remaining sections in 5.5 could be completed in more detail and assembled into a first draft, detailed work plan.
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5.5.2 Ground Water/Geology/Mining

Second bullet-It is presumed that the quarterly sampling will continue for a year. The duration of the sampling is not specified. The samples for the groundwater should include at least a RAS total metals scan on the initial samples. Total and dissolved measurements need to be performed on the mine shafts. For the wells total metals will be adequate.

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5.6.7 Identification...

EPA will review and approve the work plan before execution of any pilot tests.

6.0 SCHEDULE

The front end tasks seem longer than necessary. If the planning steps will speed the gathering of additional data, then the time will be well spent. However, some shortening of the initial evaluation duration seems appropriate.

7.0 PROJECT TEAM

No comments on this section.

Attachment 1 12/4/89

EPA REVIEW COMMENTS
on
DRAFT WORK PLAN
BAXTER SPRINGS/TREECE RI/FS and ENDANGERMENT ASSESSMENT

prepared by PRP Group
dated November 9, 1989

EPA review comments are organized by section in the order of the report.

1.0 INTRODUCTION

1.1 BACKGROUND

The work plan discusses that part of the Treece subsite that was addressed by the Tar Creek project. The boundaries of the Tar Creek analyses need to be reported and compared to the proposed boundaries of the Treece subsite. The work plan does not address either point. The Treece boundary shown is the schematic boundary only. The Treece subsite boundary needs to be redefined based on hydrologic boundaries and waste pile extent.

Page 3

1.2 PURPOSE AND OBJECTIVES

¶1 At the end of the paragraph, there is a statement that is controversial and not substantiated. It should be removed.

¶2 This paragraph needs to make reference to both CERCLA and SARA not just the NCP.

Objective Points:

1. This statement needs clarification. It could be interpreted to say that no new information is needed. From a preliminary review of the available data, there is insufficient data on the water quality of both the surface and groundwater systems to meet either the general information needs stated in ¶1.

2. As with the previous point, this objective is very vague. It could be interpreted in a very general way or in a very site specific way. EPA guidance specifies the methodology to be used for any risk or endangerment assessment. This guidance must be followed to avoid a potential disagreement at a later time on the results of the endangerment assessment.

3. Objective 3 proposes to assess the data needed for the design of potential remedial actions. The RI also needs to gather and assess the data needed to properly characterize the two subsites under study.

Page 4

1.3 RELATIONSHIP OF BAXTER SPRINGS/TREECE RI/FS PROCESS TO GALENA SUBSITE AND TAR CREEK SITE ACTIONS

¶1 The statement "should any be necessary" is subjective and needs to be deleted.

¶2 Second bullet-The mining at Baxter Springs/Treece was later, done on a larger scale and with more modern equipment than the mining at Galena. These differences need to be discussed. The occurrence of the ore body within the shallow unit at Galena is a particular difference that must be discussed.

¶3 Fourth bullet-There are geologic differences between Galena and Baxter Springs/Treece. Specifically, the shallow aquifer is deeper and overlain by another unit.

Page 5

¶2 first bullet-The deeper mineralization is only one factor to be considered. The reason for less waste rock at the surface is the difference in mining methods where the waste rock from one layer was stored in another layer as the mining progressed. The statement about the waste rock requires verification before being included in the document.

Third bullet- The last sentence is conjecture and needs to be verified.

Fourth bullet-The use of the Roubidoux in the area of the subsites needs to be verified. In EPA conversations with KDHE, it was confirmed that Baxter Springs has two potentially operational Roubidoux wells. Well No. 5 is normally used to supply water directly to the system during night-time hours. However, the well No. 5 pump, which has a capacity of 400 gpm or greater, has failed and is currently being repaired. Well No. 6, which has been found to have high radionuclides, has been authorized for use only if its water is blended with the other water supply sources.

Page 6

Second bullet-There are fewer subsidences in the two subsites but they are major subsidences. Subsidences have not addressed as a hazard in the previous Galena RI/FS process. The alleged remote location for the waste piles may make them the object of even more recreational activities. The size differences of the waste products needs to be addressed. The wastes may carry further in the winds creating hazards remote from their location. The general tone of the statement needs to be restated as an hypothesis to be tested with the acquisition of more data to verify or deny. The same statement could be made regarding the third bullet on this page.

¶2-The thrust of the paragraph is to avoid the duplication of effort. EPA supports that goal. The applicability of the Tar Creek and Galena data needs to be demonstrated for the Baxter Springs and Treece areas. As with the previous statements, the emphasis needs to be on the positive statements. The cost-effectiveness tests referred to in the paragraph are commonly applied to remedies not the studies used to develop the remedies. EPA supports the use of existing data. Some information will need to be gathered to demonstrate the similarities of the surface wastes, similar hydrologic conditions, similar soils conditions, etc.

2.0 GROUND AND PHYSICAL SETTING

2.1 SITE HISTORY

Page 7

¶3-Several statements are made that require verification during the RI:

- volume and location of development rock and mill tailings
- metals content of the development rock (visual interpretation is only one method to be used-laboratory analyses is preferred for quantitative results)

Page 8

2.2 PHYSICAL SETTING

Suggested wording changes for this section will be provided on December 8th.

¶2-The subsite boundaries are unclear on the maps. The mapping boundaries need to be compared to the hydrologic boundaries.

Page 10

2.2.2 Geology and Geohydrology

¶3-The statement at the end of the paragraph ignores any ground water in the Pennsylvanian. This statement needs to be confirmed by the RI or another source. It is not until the next ¶ that the work plan acknowledges this fact.

Page 13

2.2.4 Soils

¶2-The information given in the EPA work plan came from the Cherokee County soil survey.

Page 14

2.2.6 Current Land Use

A CH2M HILL windshield survey of the area showed several industrial plants in the area plus coal mining activities at the periphery. Additional land use inventory work is needed to develop a comprehensive understanding of current local land use. County data may be available to assist with this process

3.0 INITIAL EVALUATION

Page 16

3.1.2 Geology

¶1-It has not been confirmed that the ore deposits are all in silicified areas. In the Galena subsite, some of the ores were outside the silicified areas. The statements regarding unmineralized rock need to be substantiated through analytical chemistry analyses and field review of the waste rock piles.

¶2-The statements regarding jointing and brecciating of the rocks needs to be supported by observations.

3.1.3 Ground Water

Shallow Ground Water

¶1-It should be recognized that the MacFarlane and Hathaway data are regional information. The applicability of the data to both subsites should be confirmed.

Page 17

¶1-This discussion needs to address the thin lateritic soils that developed on the Pennsylvanian rocks. The attenuation of metals through the transport mechanisms at the site has yet to have been established. Similarly, the upward gradient hypothesized in the last sentence has not been proven.

¶2-The EPA data on wells in the Baxter Springs/Treece area needs to be verified as the boundaries of the subsites have changed.

Deep Ground Water

¶1-Refer to the previous discussion on Roubidoux well usage by Baxter Springs for comment on this paragraph.

Page 18

¶2-The closing statement does not appear to be substantiated. The mining took place at depths within the potentiometric surface of the deep ground water system.

¶3-The concern regarding cross contamination is based on reports of the use of deep aquifer wells to dewater the mines. "Pumping to the surface" does not identify the source of the pumped water. If the contention regarding the mines being within the hydraulic influence of the artesian Roubidoux is correct, then the work plan statement is incorrect. This point needs to be clarified.

Continual reference to the Tar Creek work is made in the PRP draft work plan. The applicability of this information to the Baxter/Treece area needs to be demonstrated (similar waste pile chemistry, similar soils and underlying geology, similar mining depths, etc.). The local surface water hydrologic conditions are based on small, headwaters type watersheds. These can vary substantially between drainage basins.

Page 19

3.1.4 Surface Water

Table 2-These values are from a one-time, synoptic survey. These conditions could change based on seasonality. and flow conditions. These values were measured at low flow conditions.

¶2-The concern for biota in subsite streams cannot be discounted at this time. Available data indicate elevated levels of metals in fish collected from the Spring River near Baxter Springs as compared to other areas of the state.

¶3-This paragraph implies that no new surface water data will be gathered. Based on the headwaters character of the area, the data applicability needs to be demonstrated. It is currently anticipated

that new flow data will be needed. This paragraph seems to contradict 5.5.3.

Page 20

3.1.5 Soils/Sediments

¶2-As with the surface water section, this paragraph implies that no new data will be gathered. This implication is contradictory to Section 5.5.4, which outlines some data needs. Substantiating data needs to be gathered. The lack of piles being located in streams does not eliminate the potential for runoff. The chat piles will exhibit runoff during precipitation events. It is this runoff or leachate that needs to be evaluated as a source.

3.1.6 Surface Wastes

Second Bullet-The statement regarding grain size and lack of bioavailability runs counter to the Galena experience and the general trend of more surface area to volume ratio for finer grained materials. The statements regarding metals concentrations need to be determined using field sampling and analysis.

Page 21

¶1-The slimes in the chat piles need to be included in this discussion. The limitation of the risk assessment to these metals relies too heavily on Galena. If the inhalation pathway is evaluated in detail, the list may be different depending on the contents of the fines and chat (e.g. silicosis).

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